REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Official Action dated October 10, 2003. In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

Claims 1-21 are under consideration in this application. Claims 1-3, 7, and 9 are being amended, as set forth above and in the attached marked-up presentation of the claim amendments, in order to more particularly define and distinctly claim Applicants' invention. A new claim 21 is being added to recite other embodiment describe in the specification, especially Figs. 1 & 3.

Additional Amendments

The claims are being amended or added to correct formal errors and/or to better disclose or describe the features of the present invention as claimed. Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

Formality Rejection

Claims 3 and 13 were rejected under 35 U.S.C. § 112, first paragraph, for failing to enable a person skilled in the art to provide "a gate signal line layer of equal to or less than 0.1 μm thick" by patterning an Al film of approximately 260 nm thick. Applicants contend that one skilled in the art can fabricate a gate signal line layer of equal to or less than 0.1 μm thick by "*selectively etching the Al film using a photolithography technique so as to form the gate signal lines GL* (p/ 25 , lines 6-10)". Accordingly, the withdrawal of the enablement rejection is in order, and is therefore respectfully solicited.

Allowed Subject Matter

Claims 4, 6, 8, 10, 14, 16, 18 and 20 were allowed.

Prior Art Rejection

Claims 1, 2, 5, 9, 11-12, 15 and 19 were rejected under 35 U.S.C. § 102(e) on the grounds of being anticipated by U.S. Pat. No. 6,295,109 to Kubo et al. (hereinafter "Kubo"), and claims 7 and 17 were rejected under 35 U.S.C. 103(a) on the grounds of being unpatentable over Kubo, further in view of U.S. Pat. No. 6,525,788 to Nakagawa et al. (hereinafter "Nakagawa"). The prior art references of Ha et al. (6,620,655), and Shimizu et al. (6,341,002) were cited as being pertinent to the present application. These rejections have been carefully considered, but are most respectfully traversed.

The liquid crystal display device of the invention (e.g., Fig. 3), as now recited in claim 1, comprises: pixel regions (i.e., R1 + T + R2 regions between the two GLs in the attached explanatory Fig. 3; "*gate signal lines GL surround a rectangular region together with a pair of drain signal lines DL which will be explained later and this region constitutes a pixel region*" p. 16, lines 10-12) each of which is divided into a light reflection portion (R1 + R2 regions in Fig. 3; "*light reflection portion where the pixel electrode PX2 is formed*" p. 18, lines20-21) and a light transmission portion (T region in Fig. 3; "*The opening portions OM of the protective film PSV through which the pixel electrode PX1 is exposed are regions which constitute the light transmission portions* " p. 20, lines 5-7) on a liquid-crystal-side surface of one substrate out of substrates which are arranged to face each other in an opposed manner while sandwiching liquid crystal LC therebetween. on each pixel region, a first light-transmitting pixel electrode PX1 which is formed on the light transmission portion T and a major portion of the light reflection portion (over 50% of the major portions of R1 + R2 regions from a top view), a material layer (e.g., SD2 in Fig. 3) is formed on a major portion of the light reflection portion, an insulation layer PSV in which an opening OM is formed at the light transmission portion T, and a second pixel electrode PX2 which is formed on the light reflection portion R1, R2 and also functions as a reflection film are sequentially laminated.

In other words, the first light-transmitting pixel electrode PX1 is on each pixel region *except for a trivial peripheral portion of the pixel region* (p. 16, line 15; hash-marked portions in Fig. 3). As shown in Fig. 1, PX1 covers almost the whole pixel region (a rectangular region defined by a pair of DLs and a pair of GLs), *except for a trivial peripheral portion of the pixel*

region. As defined by Merriam-Webster's Online Dictionary, 10th Edition[1], "trivial" means "of little worth or importance" or " relating to or being the mathematically simplest case; specifically: characterized by having all variables equal to zero <a trivial solution to a linear equation>."

The present invention is also directed to a liquid crystal display device as now recited in claims 2-3, 7 and 9 which including the feature that a first light-transmitting pixel electrode PX1 which is formed on the light transmission portion T and a major portion of the light reflection portion *except for a trivial peripheral portion of* the light reflection portion of *the pixel region*.

If the first light transmitting pixel electrode PX1 were formed only in a part of the light reflection portion, the second light reflecting electrode PX2 would have different heights in the area where the PX1 is formed and in the area where the PX1 is not formed. However, the invention forms the first light transmitting pixel electrode PX1 on a major portion (almost the entire area) of the light reflection portion such that the second light reflecting electrode PX2 has significantly the same height in the light reflection portion. In other words, the PX1 adjusts/moderates the height of the PX2.

Applicants respectfully contend that none of the cited references teaches or suggests such a feature. In contrast, the transmissive electrode 58a in Fig. 32C of Kubo's 11th embodiment (Figs. 21 and 24) is formed on light transmission Region T and a portion of the light Region R except for a peripheral portion of the pixel region which counts for almost **1/3** of the Region R of the pixel region ***form a particular cross-sectional view***, rather than a "**trivial**" portion of the Region R of the pixel region. As further shown in Fig. 21 (Kubo's 6th embodiment) and Fig. 24 (Kubo's 7th embodiment), the transmissive electrode 58a, in fact, only covers a small (less than 10%, rather than over 50% "major") portion of the Region R of the pixel region ***from a top view***.

The invention is also directed to a liquid crystal display device, as now recited in claim 5, comprising pixel regions each of which is divided into a light reflection portion and a light transmission portion on a liquid-crystal-side surface of one substrate out of substrates which are arranged to face each other in an opposed manner while sandwiching liquid crystal therebetween. The pixel region is formed as a region which is surrounded by a pair of gate signal lines and a pair of drain signal lines and includes a thin film transistor which is operated in response to scanning signals from one gate signal line out of the pair of gate signal lines and first and second pixel electrodes to which video signals from one drain signal line out of the pair of drain signal lines are supplied through the thin film transistor. On each pixel region, the first light-

1 http://www.m-w.com/cgi-bin/dictionary?book=Dictionary&va=trivial

transmitting pixel electrode which is formed on the light reflection portion and the light transmission portion, an extension layer of a source electrode SD2 (Fig. 3) of the thin film transistor TFT which is connected to the first pixel electrode PX1 and is formed on a major portion of the light reflection portion (the over 50% portions of R1 + R2 regions in Fig. 3), an insulation layer in which an opening is formed at the light transmission portion, and the second pixel electrode which is formed on the light reflection portion, is connected to the source electrode through a contact hole formed in the insulation layer and also functions as a reflection film are sequentially laminated.

As shown in Fig. 1, the source electrode SD2 covers almost the whole lower PX2, i.e., the whole R1 region in Fig.3. By forming the extension layer of the source electrode SD2 of the thin film transistor (TFT), the source electrode SD2 adjusts/moderates the height of the PX2 in the area where the PX1 is formed and in the area where the PX1 is not formed.

Contrary to the Examiner's allegation that "the drain electrode 59c... is formed on a major portion of the reflective pixel region. (note in figure 32C)," the drain electrode 59c of Kubo, arguendo, corresponds to the source electrode SD2 of the invention. In Fig. 22 and Fig. 25, the drain electrode 59c appears to be formed on a major portion of left hand side Region R ***form a particular cross-sectional view*** taken at line 22<-> 22' in Fig. 21 and Fig. 25. However, it is clear from Fig. 21 and Fig. 24 that the drain electrode 59c is not formed on a major portion of the reflective pixel region (Region R) ***from the top view***. Accordingly, Kubo fails to teach or suggest "an extension layer of a source electrode of the thin film transistor which is connected to the first pixel electrode and is formed on a major portion of the light reflection portion" as recited in claim 5.

Accordingly, the present invention as now recited in all the claims is distinguishable and thereby allowable over the rejections raised in the Office Action. The withdrawal of the outstanding prior art rejections is in order, and is respectfully solicited.

In view of all the above, clear and distinct differences as discussed exist between the present invention as now claimed and the prior art reference upon which the rejections in the Office Action rely, Applicant respectfully contends that the prior art references cannot anticipate the present invention or render the present invention obvious. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicant's undersigned representative at the address and phone number indicated below.

Respectfully submitted,

Stanley P. Fisher
Registration Number 24,344

Juan Carlos A. Marquez
Registration Number 34,072

REED SMITH LLP
3110 Fairview Park Drive, Suite 1400
Falls Church, Virginia 22042
(703) 641-4200
March 26, 2004

SPF/JCM/JT